

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANTS  
PTO-1449**



Attorney Docket No.  
2885/94

Serial No.  
10/526,595

Applicant(s)  
Vorbach et al.

Filing Date  
September 8, 2003

Group Art Unit  
2819

**U.S. PATENT DOCUMENTS**

| EXAMINER'S<br>INITIALS | PATENT/<br>PUBLICATION<br>NUMBER | PATENT/PUBLICATION<br>DATE | NAME               | CLASS | SUBCLASS | FILING<br>DATE |
|------------------------|----------------------------------|----------------------------|--------------------|-------|----------|----------------|
|                        | 4,233,667                        | November 11, 1980          | Devine et al.      |       |          |                |
|                        | 4,414,547                        | November 1983              | Knapp et al.       |       |          |                |
|                        | 4,720,778                        | January, 1998              | Hansen et al.      |       |          |                |
|                        | 4,918,440                        | April 17, 1009             | Furtek et al.      |       |          |                |
|                        | 5,212,716                        | May 1993                   | Ferraiolo et al.   |       |          |                |
|                        | 5,311,079                        | May 10, 1994               | Ditlow et al.      |       |          |                |
|                        | 5,392,437                        | February 21, 1995          | Matter et al.      |       |          |                |
|                        | 5,652,529                        | July 1997                  | Gould et al.       |       |          |                |
|                        | 5,737,516                        | April 1998                 | Circello et al.    |       |          |                |
|                        | 5,748,979                        | May 1998                   | Trimberger         |       |          |                |
|                        | 5,752,035                        | May 1998                   | Trimberger         |       |          |                |
|                        | 5,841,973                        | November 1998              | Cooke et al.       |       |          |                |
|                        | 5,892,962                        | April 6, 1999              | Cloutier           |       |          |                |
|                        | 5,926,638                        | July 1999                  | Inoue              |       |          |                |
|                        | 5,960,200                        | September 1999             | Eager et al.       |       |          |                |
|                        | 5,996,083                        | November 30, 1999          | Gupta et al.       |       |          |                |
|                        | 6,003,143                        | December 1999              | Kim et al.         |       |          |                |
|                        | 6,170,051                        | January 2001               | Dowling            |       |          |                |
|                        | 6,211,697                        | April 2001                 | Lien et al.        |       |          |                |
|                        | 6,212,650                        | April 2001                 | Guccione           |       |          |                |
|                        | 6,256,724                        | July 2001                  | Hocevar et al.     |       |          |                |
|                        | 6,282,701                        | August 2001                | Wygodny et al.     |       |          |                |
|                        | 6,286,134                        | September 2001             | Click, Jr. et al.  |       |          |                |
|                        | 6,301,706                        | October 2001               | Maslennikov et al. |       |          |                |
|                        | 6,398,383                        | June 2002                  | Huang, Yu-Hwei     |       |          |                |
|                        | 6,421,809                        | July 2002                  | Wuytack et al.     |       |          |                |
|                        | 6,425,054                        | July 23, 2002              | Nguyen             |       |          |                |
|                        | 6,434,695                        | August 2002                | Esfahani et al.    |       |          |                |
|                        | 6,434,699                        | August 13, 2002            | Jones et al.       |       |          |                |
|                        | 6,435,054                        | October 10, 2000           | Nguyen             |       |          |                |
|                        | 6,437,441                        | August 2002                | Yamamoto           |       |          |                |
|                        | 6,490,695                        | December 2002              | Zagorski et al.    |       |          |                |
|                        | 6,504,398                        | April 2004                 | Vorbach            |       |          |                |
|                        | 6,542,844                        | April 2003                 | Hanna              |       |          |                |
|                        | 6,757,847                        | June 2004                  | Farkash et al.     |       |          |                |
|                        | 6,785,826                        | August 31, 2004            | Durham et al.      |       |          |                |
|                        | 6,803,787                        | October 2004               | Wicker, Jr.        |       |          |                |

|  |                                  |                          |
|--|----------------------------------|--------------------------|
| <b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANTS<br/>PTO-1449</b> | Attorney Docket No.<br>2885/94   | Serial No.<br>10/526,595 |
|  | Applicant(s)<br>Vorbach et al.   |                          |
|  | Filing Date<br>September 8, 2003 | Group Art Unit<br>2819   |

|  |              |                    |                  |  |  |  |
|--|--------------|--------------------|------------------|--|--|--|
|  | 6,886,092    | April 2005         | Douglass et al.  |  |  |  |
|  | 6,901,502    | May 2005           | Yano et al.      |  |  |  |
|  | 6,961,924    | November 2005      | Bates et al.     |  |  |  |
|  | 6,928,523    | August 2005        | Yamada, Akira    |  |  |  |
|  | 2001/0010074 | July 26, 2001      | Nishihara et al. |  |  |  |
|  | 2001/0032305 | October 2001       | Barry            |  |  |  |
|  | 2002/083308  | June 27, 2002      | Pereira et al.   |  |  |  |
|  | 2002/0138716 | September 26, 2002 | Paul et al.      |  |  |  |
|  | 2003/0056085 | March 2, 2003      | Vorbach          |  |  |  |
|  | 2003/0086300 | May 2003           | Noyes et al.     |  |  |  |
|  | 2003/0123579 | July 3, 2003       | Safavi et al.    |  |  |  |
|  | 2003/0014743 | January 16, 2003   | Cooke            |  |  |  |
|  | 2003/0192032 | October 2003       | Andrade et al.   |  |  |  |
|  | 2004/0199688 | October 2004       | Vorbach et al.   |  |  |  |

#### FOREIGN PATENT DOCUMENTS

| EXAMINER'S INITIALS | DOCUMENT NUMBER | DATE               | COUNTRY | CLASS | SUBCLASS | TRANSLATION                    |    |
|---------------------|-----------------|--------------------|---------|-------|----------|--------------------------------|----|
|                     |                 |                    |         |       |          | YES                            | NO |
|                     | 0 398 552       | November 22, 1990  | EPO     |       |          |                                |    |
|                     | WO 94/01987     | February 6, 1992   | PCT     |       |          |                                |    |
|                     | WO 94/08399     | April 14, 1994     | PCT     |       |          |                                |    |
|                     | WO 99/12111     | March 11, 1999     | PCT     |       |          |                                |    |
|                     | WO 04/114128    | December 29, 2004  | PCT     |       |          |                                |    |
|                     | 0 696 001       | December 5, 2001   | EPO     |       |          |                                |    |
|                     | 8-44581         | February 16, 1996  | Japan   |       |          |                                |    |
|                     | 7-154242        | June 16, 1995      | Japan   |       |          |                                |    |
|                     | 58-58672        | April 7, 1983      | Japan   |       |          |                                |    |
|                     | 2-226423        | September 10, 1990 | Japan   |       |          |                                |    |
|                     | 5-276007        | October 22, 1993   | Japan   |       |          |                                |    |
|                     | 8-250685        | September 27, 1996 | Japan   |       |          |                                |    |
|                     | 2-130023        | May 18, 1990       | Japan   |       |          |                                |    |
|                     | 11-307725       | November 5, 1999   | Japan   |       |          | Abstract & Partial Translation |    |
|                     | 2000-181566     | June 30, 2000      | Japan   |       |          | Computer Translation           |    |
|                     | 9-27745         | January 28, 1997   | Japan   |       |          | Abstract                       |    |

#### OTHER DOCUMENTS

| EXAMINER'S INITIALS | AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.   |
|---------------------|--|
|                     | Abnous, A., et al., "The Pleiades Architecture," Chapter I of <i>The Application of Programmable DSPs in Mobile Communications</i> , A. Gatherer and A. Auslander, Ed., Wiley, 2002, pp. 1-33. |

# INFORMATION DISCLOSURE STATEMENT BY APPLICANTS PTO-1449

Attorney Docket No.  
2885/94

Serial No.  
10/526,595

Applicant(s)  
Vorbach et al.

Filing Date  
September 8, 2003

Group Art Unit  
2819

|  |   |
|--|---|
|  | Alippi, et al., "Determining the Optimum Extended Instruction Set Architecture for Application Specific Reconfigurable VLIW CPUs," IEEE, 2001, pp. 50-56.   |
|  | Athanas, "A Functional Reconfigurable Architecture and Compiler for Adoptive Computing," IEEE, 1993, pages 49-55  |
|  | Beck et al., "From control flow to data flow," TR 89-1050, October 1989, Dept. of Computer Science, Cornell University, Ithaca, NY, pp. 1-25.   |
|  | Cardoso, Joao M.P. and Markus Weinhardt, "XPP-VC: A C Compiler with Temporal Partitioning for the PACT-XPP Architecture," Field-Programmable Logic and Applications. Reconfigurable Computing is Going Mainstream, 12 <sup>th</sup> International Conference FPL 2002, Proceedings (Lecture Notes in Computer Science, Vol. 2438) Springer-Verlag Berlin, Germany, 2002, pp. 864-874. |
|  | Chen et al., "A reconfigurable multiprocessor IC for rapid prototyping of algorithmic-specific high-speed DSP data paths," IEEE Journal of Solid-State Circuits, Vol. 27, No. 12, December 1992, pp.1895-1904.  |
|  | DeHon, A., "DPGA Utilization and Application," MIT Artificial Intelligence Laboratory, Proceedings of the Fourth International ACM Symposium on Field-Programmable Gate Arrays (FPGA '96), IEEE Computer Society, pp. 1-7.  |
|  | Franklin, Manoj et al., "A Fill-Unit Approach to Multiple Instruction Issue," Proceedings of the Annual International Symposium on Microarchitecture, November 1994, pp. 162-171.   |
|  | Hartenstein, R., "Coarse grain reconfigurable architectures," Design Automation Conference, 2001, Proceedings of the ASP-DAC 2001 Asia and South Pacific, January 30- February 2, 2001, IEEE 30 January 2001, pp. 564-569.  |
|  | Hastie et al., "The implementation of hardware subroutines on field programmable gate arrays," Custom Integrated Circuits Conference, 1990, Proceedings of the IEEE 1990, May 16, 1990, pp. 31.3.1 - 31.4.3 (3 pages).  |
|  | Kastrup, B., "Automatic Hardware Synthesis for a Hybrid Reconfigurable CPU Featuring Philips CPLDs," Proceedings of the PACT Workshop on Reconfigurable Computing, 1998, pp. 5-10.  |
|  | Koren et al., "A data-driven VLSI array for arbitrary algorithms," IEEE Computer Society, Long Beach, CA Vol. 21, No. 10, 1 October 1988, pp. 30-34.  |
|  | Lee, Jong-eun et al., "Reconfigurable ALU Array Architecture with Conditional Execution," International Soc. Design Conference (ISODOC) [online] October 25, 2004, Seoul, Korea, 5 pages.   |
|  | Ling, X., "WASMII: An MPLD with Data-Driven Control on a Virtual Hardware," Journal of Supercomputing, Kluwer Academic Publishers, Dordrecht, Netherlands, 1995, pp. 253-276.   |
|  | Ling et al., "WASMII: A Multifunction Programmable Logic Device (MPLD) with Data Driven Control," The Transactions of the Institute of Electronics, Information and Communication Engineers, 25 April 1994, Vol. J77-D-1, Nr. 4, pp. 309-317. [This references is in Chinese, but should be comparable in content to the Ling et al. reference above]                                 |
|  | Ozawa, Motokazu et al., "A Cascade ALU Architecture for Asynchronous Super-Scalar Processors," IEICE Transactions on Electronics, Electronics Society, Tokyo, Japan, Vol. E84-C, No. 2, February 2001, pp. 229-237.   |
|  | Razdan et al., "A High-Performance Microarchitecture with Hardware-Programmable Functional Units, Micro-27, Proceedings of the 27 <sup>th</sup> Annual International Symposium on Microarchitecture, IEEE Computer Society and Association for Computing Machinery, November 30- December 2, 1994, pp. 172-180.   |
|  | Shirazi, et al., "Quantitative analysis of floating point arithmetic on FPGA based custom computing machines," IEEE Symposium on FPGAs for Custom Computing Machines, IEEE Computer Society Press, April 19-21, 1995, pp. 155-162.  |
|  | Siemers et al., "The >S<puter: A Novel Microarchitecture Mode for Execution inside Superscalar and VLIW Processors Using Reconfigurable Hardware," Australian Computer Science Communications, Volume 20, No. 4, Computer Architecture, Proceedings of the 3 <sup>rd</sup> Australian Computer Architecture Conference, Perth, John Morris, Ed., February 2-3, 1998, pp. 169-178.     |
|  | Skokan, Z.E., "Programmable logic machine (A programmable cell array)," IEEE Journal of Solid-State Circuits, Vol. 18, Issue 5, October 1983, pp. 572-578.  |
|  | Sueyoshi, T., "Present Status and Problems of the Reconfigurable Computing Systems Toward the Computer Evolution," Department of Artificial Intelligence, Kyushu Institute of Technology, Fukuoka, Japan; Institute of Electronics, Information and Communication Engineers, Vol. 96, No. 426, IEICE Technical Report (1996), pp. 111-119 [English Abstract Only]                     |
|  | Weinhardt, Markus et al., "Pipeline Vectorization," IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, Vol. 20, No. 2, February 2001, pp. 234-248.  |
|  | Weinhardt, M., "Compilation Methods for Structure-programmable Computers," dissertation, ISBN 3-89722-011-3, 1997. [TABLE OF CONTENTS AND ENGLISH ABSTRACT PROVIDED]  |
|  | Xu, H.Y. et al., "Parallel QR Factorization on a Block Data Flow Architecture," Conference Proceeding Article, March 1, 1992, pages 332-336 XPO1025276, page 333, Abstract 2.2, 2.3, 2.4 - page 334.  |
|  | Yeung, A. et al., "A data-driven architecture for rapid prototyping of high throughput DSP algorithms," Dept. of Electrical Engineering and Computer Sciences, Univ. of California, Berkeley, USA, Proceedings VLSI Signal Processing Workshop, IEEE Press, pp. 225-234, Napa, October 1992.  |

|  |   |                                 |
|--|---|---------------------------------|
| <b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANTS<br/>PTO-1449</b> | Attorney Docket No.<br><b>2885/94</b>   | Serial No.<br><b>10/526,595</b> |
|  | Applicant(s)<br><b>Vorbach et al.</b>   |                                 |
|  | Filing Date<br><b>September 8, 2003</b> | Group Art Unit<br><b>2819</b>   |

|   |   |  |
|---|---|--|
|   | Yeung, A. et al., "A reconfigurable data-driven multiprocessor architecture for rapid prototyping of high throughput DSP algorithms," Dept. of Electrical Engineering and Computer Sciences, Univ. of California, Berkeley, USA, pp. 169-178, <i>IEEE</i> 1993. |  |
| EXAMINER  | DATE CONSIDERED   |  |
| EXAMINER: Initial if citation considered, whether or not citation is in conformance with M.P.E.P. 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. |   |  |